September 2, 2002

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At the close of our last AC meeting we were looking for simpler ways to address the Bulletin 160 mission and schedule. The attached memo suggests an approach to doing this.

9/1/02

Proposal for Meeting Water Plan Deadline

by Alex Hildebrand

Introduction

Several conclusions appeared to be reached at the August 29 AC meeting.

1) It is not possible to make the complex analyses previously contemplated until far beyond the March deadline for a public draft.

2) It is probably not possible and might not be desirable to get a prompt legislative OK for a sufficient delay to permit the previously contemplated complex analyses.

3) The public draft that is due in March must be a defensible plan (not a precursor for a plan) although it may be subject to refinement by later amendments based on further analyses.

4) The AC must therefore consider less cumbersome ways to fulfill the mission of Bulletin 160-2003 on schedule.

The purpose of this memo is to propose a less cumbersome way to meet the Bulletin 160 deadline in a defensible manner.

Considerations leading to a less cumbersome but credible approach

The basic Bulletin 160 mission is first to forecast what social needs will exist for the future population in 2030 that involve the use of water. These include adequate housing, recreation, adequate goods and services, appropriate protection of the environment, an adequate supply of food, etc. The second step is to estimate how much water it will take to meet these social needs. The third step is to propose how that water can be supplied.

We have made long lists of the numerous, complex, and interrelated matters that will affect each of these three aspects of compliance with the mission. This has been useful in making us all aware of the many considerations that will combine to affect the future. However, it should also make us aware that no amount of modeling can alter the fact that we can really only speculate on many of the social choices, resource limitations, technologies, opportunities, and priorities that will exist in 2030. How well could we have predicted thirty years ago what environmental laws would now exist, what electronic devices we would have, what goods would be imported and exported, etc., in today's environment?

We can not predict the 2030 price of oil, gas, and power. We can not therefore predict the cost of water conveyance and desalinization. We do not know what farmers will be able to pay for water because we do not know whether the price of food will rise faster than the cost of water. These and other unpredictables will have more effect on future water costs, water supplies, and water uses than many of the items on our list of interrelated influences. It appears, therefore, that a much simpler quantitative approach should provide a credible and perhaps equally realistic result as compared to a complex analysis. It will be better to acknowledge and discuss unresolvable uncertainties rather than to pretend that we can predict and quantify them.

A less cumbersome 3-prong approach

I propose that we make three concurrent studies which could lead to a credible plan. The first study would be based on a single estimate of California's population growth to 2030. For purpose of illustration I will assume 30% growth. The study results could later easily be proportioned to smaller or larger growth assumptions.

We would separate the social needs that would rationally be expected to grow in approximate proportion to population, i.e., housing, goods and services (in total), food, recreation, parks, landscaping, etc. The estimated water needed for consumptive or irrecoverable use in meeting these needs would then be a 30% increase from present water use adjusted for reasonably assured increases in efficiency of use for each purpose.

In the case of goods and services, it would be assumed that there will be no net change in the overall import/export ratio. In the case of food the AC's recommended Water Plan could offer DWR two choices. Either the food supply could be assumed to be dependent on net importation of food from an uncertain world market to a defined degree, or it could be assumed that we will not depend on net food imports. If AB 2587 becomes law this month as anticipated, DWR must estimate the water supply that would be needed for domestic production of an adequate food supply as defined in that bill.

The water needed for environmental protection would be the present level plus any committed increases due to implementation of new committed FERC fish flows, protections already approved by the legislature or congress but not yet implemented, etc. The AC could suggest that DWR choose between this committed level of protection and some defined larger figure. In either case this level of water use should be adjusted for anticipated increases in environmental water use efficiency.

The second concurrent study would be to follow Jonas's suggestion that we study two of the eleven regions in depth so that we find out what problems there are in doing so. We would also ascertain whether a complex study for those regions yields significantly different results from the simplified study approach proposed above if applied to those

regions. If the difference is not substantial, it would give credence to the simplified study. If the difference is substantial we would determine why.

The third concurrent study would analyze the measures that could provide the water supply required for the first of the concurrent studies. This third study would have to have alternatives to address different mixes of measures that would be appropriate with different assumed future water and power costs and the different future sources of food, etc. It will also have to address dry cycles and wetter cycles. This should get started right away because it will not be easy.

Uncertainties which can not be credibly quantified would be acknowledged in narrative. Climate change, for example, can be addressed in narrative. Long term trends in climate are not likely to be greater than typical short term fluctuations during the next three decades.